IN THE CLAIMS

Please cancel claims 1-6 without disclaimer or prejudice, and insert new claims 7-12 as follows:

--7.   A method for modeling fluid flows in a fractured multiplayer porous medium to simulate interactions between pressure and flow rate variations in a well through the medium, comprising:

discretizing the fractured medium by a mesh pattern with fracture meshes centered on nodes at fracture intersections with each node being associated with a matrix volume; and

determining flows between each fracture mesh and the associated matrix volume in a pseudosteady state.

8.   A method as claimed in claim 7, wherein:

the medium comprises fractured layers; and

the matrix volume associated with each fracture mesh in each layer of the porous medium contains all points which are closer to a corresponding node than to neighboring nodes.

9.   A method as claimed in claim 8, wherein:

each fractured layer is discretized in pixels and the matrix volume associated with each fracture mesh is defined by including all pixels that are closer to the corresponding node than to the neighboring nodes.

10.   A method as claimed in claim 7, comprising:

determining at any point a transmissivity value for each pair of a fracture mesh

and a matrix block by considering that pressure varies linearly depending on a distance

from a point being considered to the fracture mesh associated with the matrix block.

11.   A method as claimed in claim 8, comprising:

determining at any point a transmissivity value for each pair of a fracture mesh

and a matrix block by considering that pressure varies linearly depending on a distance

from a point being considered to the fracture mesh associated with the matrix block.

12.   A method as claimed in claim 9, comprising:

determining at any point a transmissivity value for each pair of a fracture mesh

and a matrix block by considering that pressure varies linearly depending on a distance

from a point being considered to the fracture mesh associated with the matrix block.--